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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/489,254	01/21/2000	Robert Wesley Bossemeyer JR.	AMT-9704C	5614

7590 02/15/2002

Law Office of Dale B. Halling  
24 S Weber Street  
Suite 311  
Colorado Springs, CO 80903

EXAMINER

OPSASNICK, MICHAEL N

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 02/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/489,254	BOSSEMEYER ET AL.
	Examiner	Art Unit
	Michael N. Opsasnick	2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 21 January 2000.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 22-31 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 22-31 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
 

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naik et al (5548647) in view of Higgins (5339385).

As per claims 22, Naik et al (5548647) teaches:

“generating a codebook.....plurality of training utterances” as storing the reference template of enrolled users (col. 5 lines 32-40);  
“receiving a plurality.....test utterances” as receiving training utterances (col. 5 lines 32-40);  
“comparing...test utterances” as comparing stored utterances with user (col. 5 lines 38-40);

“combining the plurality ...verification decision” as deriving verification score form the averaged Euclidean minimums (fig. 16, subblock 186);

Naik et al (5548647) does not explicitly teach:

“comparing each of the plurality of test utterances to each of a plurality of training utterances”, however, Higgins (5339385) teaches the concept of using non-enrolled user reference speaker data to measure a degree of similarity (Higgins et al, col. 4 lines 51-62). Therefore, it would have been obvious to one of ordinary skill in the art of speaker verification systems to improve upon the invention as taught by Naik et al(5548647) with non-enrolled user reference speaker data, and using such data to determine speaker verification because it would advantageously improve the accuracy of the verification system with yet another constraint (col. 2 lines 3-11).

As per claim 23, Naik et al (5548647) teaches “weighting each.....decisions” as averaging Euclidean minimums (Fig. 16, subblock 184);

As per claim 25, Naik et al (5548647) teaches:

“evaluating a quality.....decisions” as measuring the test template versus the reference template (col. 15 lines 1-9; col. 14 lines 25-34);

As per claim 26, Naik et al (5548647) teaches:

“separating the speaker into a male group and a female group” as pilot data using twenty men and women (col. 14 lines 43-53);

“determining a male variance vector from the male group” as separating the speakers into groups of males and females (col. 2 lines 57-67) and then comparing each user to a template measuring the test template versus the reference template (col. 15 lines 1-9) ;

“determining a female variance vector from the female group” as separating the speakers into groups of males and females (col. 2 lines 57-67) and then comparing each user to a template measuring the test template versus the reference template (col. 15 lines 1-9);

As per claims 27-31, Naik et al (5548647) teaches:

“determining if the speaker....male or female”; “when speaker is male.....utterance for the speaker”; “forming a decision...weighted Euclidean distance” as separating the speakers into groups of males and females (col. 2 lines 57-67) and then comparing each user to a template measuring the test template versus the reference template (col. 15 lines 1-9), and using a minimum Euclidean distance (col. 19, lines 35-42).

4. Claims 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naik et al (5548647) , as applied to claim 22 above, further in view of Young et al (4805222).

As per claim 24, Naik et al (5548647) does not explicitly teach:

“step of weighting.....false alarm....utterances”, however, Young et al (4805222) teaches the calculation of the probability of a false rejection and a false miss (col. 5 lines 35-65, and accompanying Fig. 4), and the use of these probabilities to weight the outcome (col. 15, line 45 - col. 16 line 16) in a verification system. Therefore, it would have been obvious to one of ordinary skill in the art of verification systems to improve the teachings of Naik et al (5548647) with determining probabilities of miss and false alarm because it would

advantageously improve the method of analyzing for such errors and therefore lead to a more accurate verification system (Young et al, col. 6 lines 5-11).

***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Naik et al (5216720)

Gandhi et al (5687287)

Pirz (4181821)

Hunt et al (5499288, 5125022, 5303299, 5297194, 5365574)

Savic et al ("Variable Parameter Speaker.....Modeling", ICASSP '90)

Naik ("Field Trial of a Speaker Verification Service for Caller Identity Verification in the Telephone Network", Interactive Voice Technology for Telecom Applications, 1994 Workshop)

Forsyth ("Discriminating Semi-continuous HMM for Speaker Verification; ICASSP 1994)

6. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872 9314,

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal  
Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (703)305-4089, who is available Tuesday-Thursday, 9AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Marsha Banks-Harold, can be reached at (703)305-4379. The facsimile phone number for this group is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (703) 305-4750, the 2600 Customer Service telephone number is (703) 306-0377.

mno  
2/9/02

*Vijay Bhawar*  
2/10/02